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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/894,087	06/28/2001	Eric J. Horvitz	MS171133.1	5322

27195 7590 12/02/2005

AMIN & TUROCY, LLP
24TH FLOOR, NATIONAL CITY CENTER
1900 EAST NINTH STREET
CLEVELAND, OH 44114

EXAMINER

CHUNG, JI YONG DAVID

ART UNIT	PAPER NUMBER
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2143

DATE MAILED: 12/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/894,087	Applicant(s) HORVITZ ET AL.	
	Examiner Ji-Yong D. Chung	Art Unit 2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-80 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-7,12,15,17,20-21,23,25,27,31,34-36,38 and 47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 7 and 35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 includes the phrase “based on such considerations as.” It is unclear if the limitations following the phrase are part of the claimed invention. For the purpose of the examination, it is assumed that they are part of the claimed invention.

Claim 35 includes integer indices i and j , which are meaningless in the context of the claim. The claim speaks of “situation i ” and a “pattern of communication j .” However, note that if real world events do not occur with integral indices (e.g., “world trade center is event number i , with $i = 100$ ”). In addition, phrase “further comprising forecasts cast as ...” is grammatically faulty, and it makes no sense.

It is assumed that the claim refers to a probabilistic model, in which objects called events (which represents and models real world events) are labeled with sequence numbers to be distinguishable from each other. It is noted that integers i and j are independent parameters.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claim 1** is rejected under 35 U.S.C. 102(e) as being anticipated by Liversidge et al. (Pub. No. 2002/0076025, Liver hereinafter)

With respect to **claim 1**, Liver shows a system comprising:

a user state identifier that determines a user's state from at least one context information source [“A user state identifier” is the VTE client. See Fig. 1. It determines the user’s state from what the user does], *wherein the user state identifier generates an indication of whether a user state change has occurred from the at least one context information source* [VTE client contacts the server and indicates the user action (“generates an indication of whether a user state change has occurred”)]; and

a data log that stores information associated with the at least one context information source at about the time of the user state change to accumulate statistics relating to at least one of an availability and an unavailability of the user [See Fig. 5 for logs. See paragraph 0073, which mentions that the server keeps a log. See paragraph 0154, which mentions a session log table, which has a “one context information source at about the time of the user state change”]

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(user terminates or begins a session) “to accumulate statistics” (session logs accumulate session data) “about the availability of the user” (about session) of the user].

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claim 2, 3, 12, 15, 17, 31, 34-35 and 38** are rejected under 35 U.S.C. 103(a) as being unpatentable over Liver in view of Horvitz et al (Pat. No. 6,01,403, Horvitz hereinafter)

With reference to **claim 2**, Liver does not show, but Horvitz shows *the system further comprising a forecaster constructed from the accumulated statistics to enable a determination of the user's at least one of availability and unavailability* [See lines 39-55, column 18 for the Inference engine (“a forecaster”), which makes forecasts based on event database. See lines 28-37, column 10, which indicates that event database model includes availability and unavailability of user].

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the information gathering module and the inference engine in Horvitz with the presence server in Liver to determine the presence information, because Liver uses a presence server and

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Horvitz shows an improved presence detection (and forecasting) system based on the inference engine.

With respect to **claim 3**, Horvitz shows *the forecaster employs a probability distribution over a time until the user returns to drive an application wherein the user can review information that has arrived* [See from line 56, column 18 to line 54, column 22. Horvitz's inference engine employs a probability distribution over time. Note that phrase "until the user returns to the drive an application wherein the user can review information that has arrived" is just the time of the user availability to read a message].

With regard to **claim 12**, Horvitz shows *determining probabilities associated with the users return in an "x" amount of time, given that the user has been away for a "y" amount of time, based upon observed evidence of the user's context*. See lines 28-37, column 10 for different attention states, two of which are 'available' and 'unavailable.' In the same context, given the equations in lines 43-48, column 16, the above-mentioned "associated probability" is the probability that a user "will return in x amount of time" (that is, the probability that the user will be available at time t_p , given that a user was last available at t_0).

With regard to **claim 15**, Horvitz shows *the forecaster that generates prediction information regarding at least one of the user's likely return and the user's current availability*. See the preceding discussion of claim 12. The features in Horvitz that meet the limitation of claim 12 also meet the limitations of claim 15.

With regard to **claim 17**, Liver shows *an e-mail service to generate automated responses to one or more messages based upon the user's availability*. See the paragraph 0067 for e-mail as one of the communication means.

With respect to **claim 31**, Horvitz shows *the user state identifier employs at least one of a rules-based determination, a statistical determination, and a decision-theoretic determination*. See the discussion of claim 2. Claim 31 reads on the features on which claim 2 reads.

With reference to **claim 34**, Horvitz shows that *the forecaster is constructed from at least one of probabilistic classifiers, support vector machines, Bayesian networks, Bayesian dependency networks, and decision trees*. See Figs. 24, 25, and 27 for Bayesian networks.

With reference to **claim 35**, Horvitz shows system of claim 34, *the forecaster further comprising forecasts cast as probability distributions, relating to at least one of the amount of time until a user returns to a situation i , or to a pattern of communication action j , based on multiple pieces of evidence, i and j being integers*. See lines 10-47 in column 16.

With regard to **claim 38**, Liver shows the following limitation:
the forecaster employed to function in at least one of an automatic, collaborative, synchronous and asynchronous manner in conjunction with at least one of a contactor [the asynchronous operation is inherent in the use of the VTE (modified) client].

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Neither Liver nor Horvitz show the contactor and a contactee *to tentatively reschedule a communication or collaboration of one or more forms, based on inferences relating to the users availability.*

Note, however, rescheduling a meeting (“communication of collaboration of one or more forms”), which is what meeting organizers do when they find attendees’ schedules booked.

It would have been obvious to one of ordinary skill in the art at the time of the invention, for those that use Liver and Horvitz’s system, upon finding themselves busy, to reschedule meetings, because rescheduling a meeting or collaboration event allows them to meet.

7. **Claims 4, 6, 7, 20, 21, 36 and 47** are rejected under 35 U.S.C. 103(a) as being unpatentable over Liver in view of Horvitz and further in view of Horvitz et al., “Attention-Sensitive Alerting” (Horvitz_2 hereinafter).

With respect to **claim 4**, Horvitz_2 shows *a system to reason about an expected cost of delayed review of information so as to guide decisions about alerting the user before the user can observe the information.* See Section 4.1 Cost of Delayed Action, in Horvitz_2.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine a module for determining the best time to deliver a message, together, with a message delivery system of Liver, because, as it is suggested by Horvitz_2, there is a cost associated with diverting one’s attention away from one’s task, and therefore, a given application (i.e, Liver’s system) will be more useful if it can send the message to the user at the moment at which it is most likely to minimize the cost of delay.

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With regard to **claim 6**, Liver shows a display *that is accessed by other users, systems, and applications regarding the at least one of the user's availability and unavailability.*

See Fig. 1. It shows a VTC client screen, that indicates which communication means is unavailable and available. A user is unavailable when none of the communication means is available.

With regard to **claim 7**, Horvitz_2 show conditioning *probabilities on different types of appointments that are observed on a calendar* [See page 8, lines 1-4, which indicates that Microsoft Outlook calendar is integrated into a system for computing the criticality (the cost) of each messages. Note that appointments ('time slot that is occupied') are inherent in calendar] and *shares information based on such considerations as to at least one of the nature and privileges of the person inspecting the calendar, wherein the information is based on an inferred urgency of a communication.* [The privilege level is inherent for each person accessing Microsoft Outlook on Windows (i.e., a user with an access privilege must have a password). Note that urgency is the 'criticality.']

With regard to **claim 20**, Horvitz_2 shows a *priorities service wherein automated responses are generated as a result of an urgency threshold and the prediction information.* See Section 5 for "urgency" ('criticality') and see section 6 for "priorities service" ('priorities prototypes').

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With regard to **claim 21**, Horvitz_2 shows that *wherein the priorities service further comprises a user configuration interface that enables at least one of sending an automated response*, configuring an urgency threshold, and configuring the amount of time the user is unavailable. Horvitz_2 shows Microsoft Outlook as part of its system, and Microsoft Outlook comprise a user configuration interface to enable “sending an automated response.”

With reference to **claim 36**, Liver shows *the forecaster including at least one of how long the user has already been gone, has not had access to a channel*. In Fig. 1, the user interface indicates which communication channel is accessed.

Horvitz_2 shows two of *other evidence including at least one of a time of day, information on a calendar*, location of a current or last appointment, location of a next appointment, a type of day, the type of day including at least one of a weekend, holiday, weekday, and current status of the user. Horvitz_2 forecaster uses Microsoft Outlook calendar. See section 6 for “time of day” as a factor used in forecasting.

With respect to **claim 47**, the following limitations read on a features of Liver: *a communications system, comprising: means for determining one or more user states; means for detecting a change of the one or more user states; means for storing user context information at about the time of detecting the change of the one or more user states* [See above discussion of claim 1]; and

The following limitation reads on the Hovitz’s features that read on claim 2.

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means for building a prediction model from the stored context information. See above for the discussion of claim 2 for “forecaster constructed from accumulated statistics.”

Horvitz_2 shows

means for generating automated message response based upon forecasting information derived from the prediction model. See the above discussion of claim 21. The feature of Horvitz_2 that meets the limitation of claim 21 also meets the limitations of claim 47.

8. **Claims 23 and 25** are rejected under 35 U.S.C. 103(a) as being unpatentable over Liver in view of Horvitz and further in view of Horvitz, “Principles of Mixed-Initiative User Interfaces” (Horvitz_3 hereinafter).

With respect to **claim 23**, Liver shows a *voice mail service wherein automated acoustical responses are generated* [See VoiceMail in paragraph 0138 and voice communications].

Neither Liver nor Horvitz shows, but Horvitz_3 shows

with associated prediction information that attempt to reschedule a call based upon considerations of the user’s availability. See Section “A TESTBED FOR MIXED-INITIATIVE UI”, which speaks of scheduling appointments

It would have been obvious to one of ordinary skill in the art at the time of the invention to apply Horvitz_3 to Liver, because the automating the rescheduling of voice messages (for a meeting) would provide greater chance that the calling party will reach the called party.

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With respect to **claim 25**, Horvitz_3 shows *a scheduling system, wherein one or more user calendars are automatically updated to reflect the associated user's availability*. See “Multiple Interaction Modalities,” section in Horvitz_3. The second column notes that “[system] has readied the calendar view to shows the user or has created a tentative appointment before displaying the results.”

9. **Claim 27** is rejected under 35 U.S.C. 103(a) as being unpatentable over Liver in view of Horvitz and further in view of Metcalfe (“After 35 years of technology Crusades, Bob Metcalfe rides off into the Sunset”) and Jensen et al (Pat. No. 5,930,828, Jensen hereinafter)

With respect to **claim 27**, Jensen shows *an automated maintenance service wherein a maintenance operation is performed at times determined by the prediction information scheduled from at least one of a resident computer system and a remote computer system and wherein the maintenance service provides at least one of drive organization, drive de-fragmentation and virus checking*. As indicated in the Abstract, Jensen reference refers to disk de-fragmentation. It is performed at scheduled times. See lines 51-58, column 6 for schedules.

Horvitz shows the forecaster (“prediction information”) as discussed above.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the forecaster to schedule a disk de-fragmentation (analogous to one in Jansen) when a user is most likely not using a particular computer, because as it is indicated in Metcalfe on page 2 related to “DISK”, if the disk defragmenter is scheduled to run while the user is using the

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computer, one would waste much time waiting for disks to be backed up and de-fragmented. See page 2 of Metcalfe, on Disk.

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Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ji-Yong D. Chung whose telephone number is (571) 272-7988. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wiley can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ji-Yong D. Chung
Patent Examiner
Art Unit: 2143


Ji-Yong D. Chung
Patent Examiner

QDC